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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/719,489
Filing Date: November 21, 2003
Appellant(s): BIXLER ET AL.

Christopher Andrzejak
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 9/13/06 appealing from the Office action mailed 1/13/06.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,153,238	Bilgrien et al.	10-1992
6,444,154	Boudreau et al.	9-2002

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1 to 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bilgrien et al. in view of Boudreau et al.

Bilgrien et al. teach a storage stable silicone composition that comprises blending a high consistency silicone with a silica filler and a treating agent for the filler at a temperature of from 100 to 200 °C. The preparation of this composition is taught beginning on column 7, line 30. First silica is maintained in a heated, fluidized state, followed by

the addition of a polydiorganosiloxane (column 7, lines 35 to 45, line 67 to the top of column 8). When the desired particle size is achieved, one of two options occurs. The first option includes discontinuing heating until the temperature decreases while continuing mixing the product during cooling to ensure uniformity. The cooled material can then be discharged. The second option involves simply discharging the hot material from the mixer (column 9, lines 20 to 30). The powder can then be converted to a high consistency composition by compressing and fusing the powder, for instance in a mill or extruder, with the addition of a catalyst (column 9, lines 42 to 59).

Particular attention is drawn to Example 1. This shows a blending step in which a high consistency silicone is mixed with silica and silica treating agents in a fluidized state at a temperature of 140 to 145 °C (column 12, line 66 through column 13). From the teachings on the top of col. 9, the particle size of the composition at this point is between 10 and 700 microns. **This meets instant step A) as claimed**. This composition is then cooled by circulating cooling water throughout the jacket (column 13, line 29). The composition is fused using a two roll rubber mill (column 13, lines 46 and on). **This meets the claimed massing step C)**. To this is added a peroxide catalyst (column 13, line 54 to 56) and the resulting composition is recovered. **This meets claimed steps D)**. As such, the only claimed step not met by this specific example is step B), *transferring* the powder to a cooling device rather than cooling in the mixer used for step A.

One can consider this difference to be comparable to the difference between a batch process (Bilgrien et al.) and a continuous process (instant claims). That is, for each compounding process in Bilgrien et al., the entire mixing process must stop for the cooling process to begin meaning that only one batch of the silicone composition can be made at a time. In the claim process the mixing process can continue because the transfer to a different device for cooling allows for a continuous process.

Boudreau et al. teach a continuous process for compounding siloxane and fillers (see abstract). The mixing of the silica and siloxane is carried out in one mixer while subsequent cooling is carried out separately. The filler/silicone polymer mixture is transferred to a different apparatus for cooling and a catalyst is subsequently added.

See column 5, lines 5 to 20. This allows for a continuous process rather than a batch process.

The rationale to modify or combine the prior art does not have to be expressly stated in the prior art; the rationale may be expressly or impliedly contained in the prior art or it may be reasoned from knowledge generally available to one of ordinary skill in the art, established scientific principles, or legal precedent established by prior case law. In the instant application, please note MPEP 2144.04 (V, E). It has been held that making a batch process continuous is obvious. The Examiner notes that comparable continuous processes, in which heating occurs in one device and cooling occurs in another, are known in the art (as shown by Boudreau). Thus the skilled artisan would have known how to adapt the batch process in Bilgrien et al. such that it is a continuous process, i.e. by transferring the mixture to a cooling apparatus rather than halting the mixing process (which requires heating) to initiate cooling. In this manner one having ordinary skill in the art would have found the difference between the example in Bilgrien et al. and the instant claims obvious.

Further evidence of the obviousness of the difference between the claims and the prior art can be found when noting the teachings on column 9, lines 23 to 30 of Bilgrien. Again, this teaches that after the desired particle size has been obtained, the hot material may be discharged. Since the blending of the powder with the curing agent and subsequent massing of the powder occurs at a temperature of below about 40° C (column 10, lines 25 to 30), if the hot material is discharged it must be cooled before the next step. Discharging such a material directly into a cooling device would expedite the cooling step. In fact, the skilled artisan would have found the use of a cooling device obvious since the working example shows a step of actively cooling the composition prior to milling. This would also render obvious a process as claimed.

In yet another manner of finding the claims obvious, the Examiner notes that column 9, lines 25 to 27, teaches that continuing mixing during cooling ensures uniformity of the final powder. Again, if the material is discharged hot, Bilgrien et al. provide motivation to continue mixing during cooling. Thus, even if the material is not discharged into a device specifically designed to cool, it would have been obvious to discharge the

material into a device that mixes. Mixing will obviously circulate air which will in turn facilitate the cooling of the material. Since the claimed step B requires only a bulk solids cooling device that facilitates accelerated bulk cooling with no further limitations, this would appear to be met by a device that mixes the product, since such mixing will facilitate cooling of a hot product even under ambient conditions.

In view of these three different considerations of the teachings in Bilgrien, taken as well in view of the teachings in Boudreau et al., the method of claim 1 is rendered obvious.

The dependent claim limitations are also taught and/or suggested by Bilgrien et al. Note for instance the bottom of column 3 and column 4 which teach viscosities which meet and/or suggest claims 2 and 3. Note the amounts and type of filler taught on column 5 which meets claims 4 and 5. Column 5 through column 6 teaches the limitations of claims 6 and 7. The example cited supra meets claims 8 to 12. Platinum catalysts are taught on column 10, lines 30 and on. This meets claim 13. Column 9, line 59, teaches an extruder, meeting claim 15.

For claim 14, since the cooling means in Bilgrien et al. is carried out in a jacketed mixer, it would follow for the cooling step in the continuous process to occur in a jacketed mixer as well.

Finally, for claim 16, note that the mixing of silicone and filler provides uniformity, which in turn eliminates large bumps or agglomerates, and meets claim 16.

(10) Response to Argument

Initially the Examiner would like to note appellants only specifically traverse the rejection of claim 1. They do not address any of the dependent claim limitations. As such this response will address only the issue of the obviousness of claim 1.

Next the Examiner notes that appellants do not argue that there is any difference between the instant claims and Bilgrien et al. other than that addressed above, i.e. the absence in Bilgrien et al. to specifically teach claimed step B). Thus it is only the obviousness of claimed step B) at hand.

Appellants' first argument **I.** is their position that the reliance on *In re Dilnot*, the batch versus continuous process rationale, is inappropriate. They are of the opinion that the difference between the claimed method and the prior art method amounts to a different step or a clear difference between the steps such that the difference is more than the difference between a batch and continuous process. The Examiner does not agree. Claimed step B) includes both transferring and cooling. The cooling step is specifically taught in the method of Bilgrien such that the only difference is the step of transferring. The Examiner noted in section **(9)** above why the prior art is considered batch versus the claimed continuous process. The Examiner has also noted why this difference results in a batch process (prior art) rather than a continuous process. Again, the addition of siloxane and silica must occur in batches in the prior art because the addition and heating steps must halt for the cooling to occur. On the other hand, if the cooling occurs in a different device, the process can proceed continuously. A similar continuous process is shown in Boudreau. Appellants have not successfully established that the difference between the two processes amounts to more than the difference between batch and continuous.

Also in the traversal **I.** appellants repeatedly refer to a demonstrated criticality (Appeal Brief, page 11, line 4; page 11 line 15; page 11, line 20). Appellants have not established a criticality in the difference between the prior art and the claimed process. Page 12, line 15, of appellants' Brief states that the "directly transferring..." limitation has the advantage of substantially reducing processing time. It is unclear how this is considered a criticality. Note for instance that the claims do not require any specific processing time or limitations on cooling rate. Even so, reduced processing time is an obvious advantage. As noted in the third full paragraph in section 2 of the final office action 1/13/06, this is a self evident difference. In the process of Bilgrien et al., all of the components in the mixer - the product, the air, the plow and chopper blades, the mixer itself - must undergo cooling while the product is cooled. Obviously, by transferring the product to a different, unheated device, the cooling process will proceed more rapidly as the excess energy and time required to cool the air, the plow and chopper blades, the mixer itself, is not needed. Thus the only benefit argued by appellants for the difference

in the process is an obvious benefit and does not lend unobviousness or patentability to the claims.

In appellants' traversal II. they argue that the combination of Bilgrien et al. and Boudreau et al. is improper because these are non-analogous arts. The Examiner disagrees as they are both drawn to methods of blending and compounding a silicone polymer and silica filler. Both references are from the same field of endeavor. Since appellants admit that classification is some evidence of analogy (Brief, page 14, line 5), the Examiner notes that both references are classified in 524/588, the general subclass reserved for polysiloxanes having a silica filler.

Appellants argue that Boudreau is directed to the field of liquid silicone rubbers which are not rendered into powdered or particulate materials as done in the instant process. As noted in section 2, paragraph 4, of the office action dated 1/13/06, both Bilgrien, Boudreau et al. *and* the viscosity of the claimed polysiloxane (instant claim 2) overlap considerably. The prior art references overlap through the range of 1,000,000 cps. to 2,000,000 cps (Boudreau, column 3, line 19; Bilgrien, column 3, line 55). Thus while appellants try to dismiss these references as non-analogous, the compositions that are mixed in both references are, in fact, analogous.

On page 15, lines 3 and on, of the Brief, appellants note that the powdered organopolysiloxane product is somewhat sticky and easily massed, which is undesirable prior to cooling. They state that this is a unique problem that would be absent in the process of Boudreau et al. The Examiner disagrees that this is a unique problem since Bilgrien et al. address this problem by continuing mixing as the product cools to ensure uniformity (column 9, line 26 and on).

Finally, the Examiner notes that Boudreau et al. is relied upon only to the extent that it demonstrates that continuous methods of compounding silicone and silica by transferring the product to a separate cooling device are, in fact, known in the art. This reference was cited to show that the claimed step of transferring, on its own, is not one that is novel and completely new to the art of silicone rubbers.

In conclusion, the Examiner has established a prima facie case of obviousness for the claimed process. Appellants have not met their burden in overcoming this case or in establishing any unobviousness in the process. The Examiner maintains that claims 1 to 16 are rendered obvious, as detailed above.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Margaret Moore

Conferees:

James Seidleck

Randy Gulakowski